

# A Survey: E-Learning Affects, Satisfaction and Sentiments of Students of Shaheed Benazir Bhutto University Shaheed Benazirabad, Pakistan

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## ABSTRACT

In this paper authors have concluded the satisfaction of undergraduate students about the e-learning (electronic learning) during pandemic situation. The data is collected through research questionnaire from 94 students of Information Technology department of Shaheed Benazir Bhutto University, Shaheed Benazirabad. From the total participants 75.5% were male and 24.5% were female. from the result analysis we concluded that those students who are already computer literate and established financial background they managed to learn by home however those who have lack of computer knowledge, belongs from the rural areas and unavailability of internet facility they are not supposed to manage the online classes. few students reports that they don't have computing devices and internet facility therefore they come at the friend's residency to attend the online class or to attempt the online examination. As we asked one open-ended question to share their experience about the online learning, from that response we have calculated overall sentiments about the students through the **MonkeyLearn** online tool, results of sentiments shows that 55.3% positive emotions and rest of the students showed negative emotions about the online learning.

**Key Words:** SBBU-SBA, Undergraduate, students, Higher Education, Computer Literacy, internet, e-learning.

## 1 INTRODUCTION

An educational institution is a place where people of different ages gain an education, including preschools, childcare, primary schools, secondary school, high schools, and universities. They provide a large variety of learning environments and learning spaces.

Due to global outbreak of the COVID-19 pandemic has spread worldwide, affecting almost all countries and territories.

Initially, the outbreak was recognized in December 2019 in Wuhan, China. Due to take responsive care the public cautions followed by the countries around the world. To control the transmission of COVID-19 public are strategies had been followed such as wearing a mask, social distancing, hand wash, avoid gatherings. [1].

The COVID-19 pandemic has created a huge disturbance in education systems in human history, affecting nearly 1600 million learners in larger than 200 countries. Closings of schools, institutions, and other learning spaces have influenced more than 94% of the world's student population. This has brought far-reaching changes in all aspects of our lives. Social distancing and restrictive movement policies have significantly disturbed traditional educational practices. Reopening of schools after relaxation of restriction is another challenge with many new standard operating procedures put in place [2].

### 1.1 Organization of Paper

The research paper is based on following sections. 1. Introduction: which shows the overview of COVID-19 and e-learning. 2. Literature review: which shows related work related to proposed research. 3. Research Methodology: which shows overall procedure that how research is carried on. 4. Data Collection: shows method of getting data from the participants. 5. Result discussion: In this section we will discuss about the result which is based on analysis of collected data from participants. 6. Conclusion: which represents conclusion of the research.

## 2 LITERATURE REVIEW

Due to outbreak of COVID-19 each organization had been closed due to prevention of spread of COVID-19 / virus. Education system converted from face-to-face teaching to online classes [2] [3]. various tools have been used for online teaching and learning process such as WhatsApp, Telegram, email [4] Google classroom, Google Meet, Webex [5], Zoom [6], Facebook [7]. most effective method of communication between teacher and student is face to face communication however due to COVID-19 Pandemic situation all educational institutes such as primary schools to university level institute

are adopting e-learning method [8] e-learning refers the effective learning process created by combining digitally delivered content with (learning) support and services [9].

### 3 RESEARCH METHODOLOGY

The Survey research method has been followed. For collecting data from the undergraduate students, we have designed a questionnaire which contains close and open-ended questions.

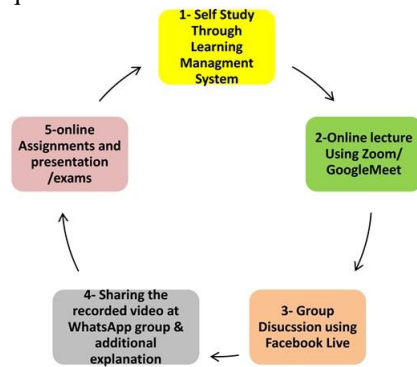


Fig. 1. Teaching activities using WhatsApp and Facebook [10]

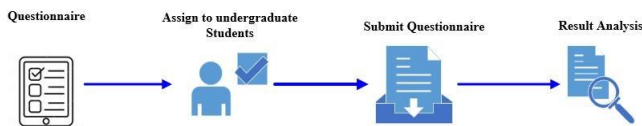


Fig. 2. Research Methodology

The research methodology consists of submodules. Figure 2 shows research steps such as to design Questionnaire, to distribute Questionnaire, To Submit Questionnaire and to Analyze the collected data. Research has been conducted for only Shaheed Benazir Bhutto University, Shaheed Benazirabad (SBBU-SBA). the first step of this research is to design a Questionnaire for collecting data from the undergraduate students of Information Technology department of SBBU-SBA. The questionnaire first part contains the demographic data contains the name, ID, email, age, gender, area of residency (Urban / Rural) department, year of study. the second part of the Questionnaire contains close and open-ended such as student has computing device such as Personal Computer, Laptop, Smart Phone, etc., a student has internet facility, what amount of cost they spent for internet facility, which type of internet service provider connection are they using, are they having any experience of e-learning/distance learning? etc. however besides these close-ended questions, there are open-ended questions too such as what problems are they facing during online classes? are teachers cooperating while conducting online lectures? and overall experience of students about e-learning in Pandemic situations.

In the second step, designed Questionnaire is distributed among the undergraduate students of the Information Technology department of SBBU-SBA. In the third step, all students submit the Questionnaire to answer the research questions.

In the last step, Analysis will be taken place on the collected sample data.

### 4 DATA COLLECTION

In this step, questionnaire designed and assigned to the participants. The Questionnaire is designed with the help of Google Form, it is free web-based resource in addition it saves the individuals responses in Google Sheets along with graphical representation of overall collected responses.

#### 4.1 Sample Size

The Questionnaire is distributed via Google Form link to the students of Information Technology Department of SBBU-SBA. Total 94 responses collected, the participants belong from first, second and third year.

### 5 RESULT DISCUSSIONS/RESULT ANALYSIS

In this step, we will discuss about the analysis of collected responses. Figure No. 3 shows that 75% male students and 25% female students.

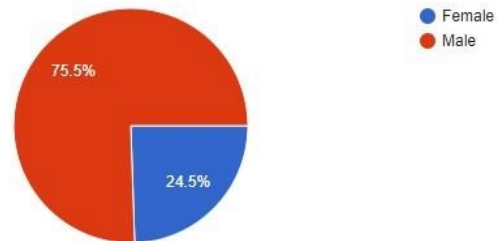


Fig. 3. Gender Classification

Figure No. 4 shows student's residency area, 48% students are living in the Rural areas and rest of the students' lives in Urban areas.

Figure No. 5 shows which computing device(s) they own and can use for attending the online class.

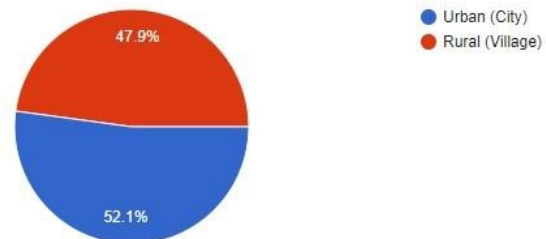


Fig. 4. Participants Area

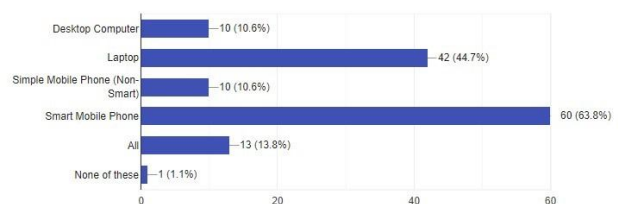


Fig. 5. Participants holding Computing Devices

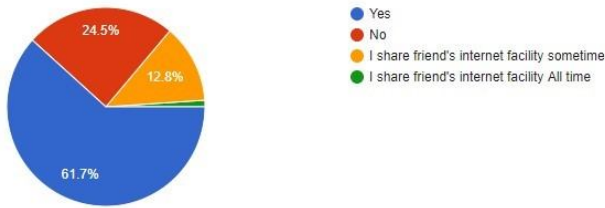


Fig. 6. Internet Facility

Figure No. 6 shows that are they have internet facility? are state be response that 62% students have internet facility, 25% students don't have any internet facility and rest of the students shares friend's internet sometimes or all time.

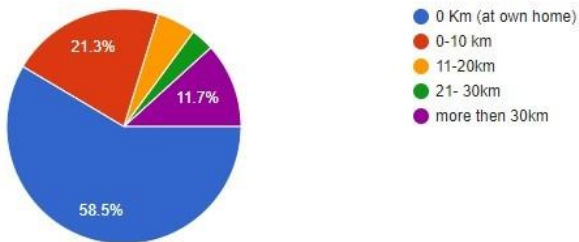


Fig. 7. Students Travel for attend the online Class

Figure No. 7 shows that due to unavailability of internet students travel from rural areas to urban area such as (friends' home) to attend the online classes. almost 59% students do not travel because they have internet facility that's why they attend online classes at their home, however rest of the students do travels more than 1km.

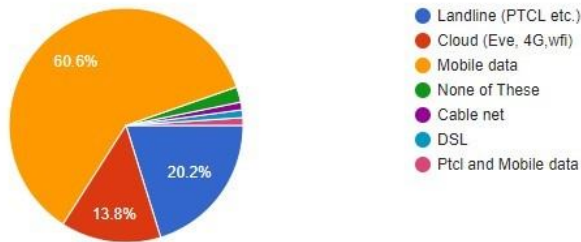


Fig. 8. Participants using Internet Connection

Figure No. 8 shows that which type of internet services provider (ISP) is used by students. as they reported that almost 61% students use Mobile data/ internet, rest of students uses Landline, Cloud, Cable net, etc.

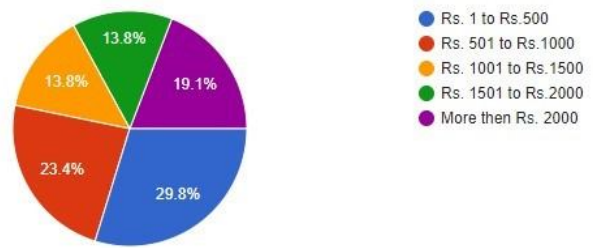


Fig. 9. Participants spends cost for internet facility

Students were asked that how much amount they spend for internet facility. Figure No. 8 shows that 30% students spends Rs.1 to Rs500, 24% students spends Rs.501 to Rs.1000 , 19% students spends more than Rs. 2000. 13% students spends Rs.1001 to Rs1500, and rest of students spends Rs1501 to Rs.2000.

as students were asked that which method is comfortable for e-learning, Figure No. 10 shows that almost 45% students comfortable with real time class using ZOOM. 22% students were comfortable with voice recorded Power Point slides, 23% students reported that they are comfortable with online class using Google Meet and rest of the students were comfortable with real-time online class with any software.

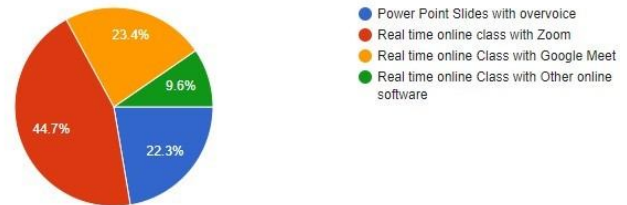


Fig. 10. comfortable e-learning Resource by Participants

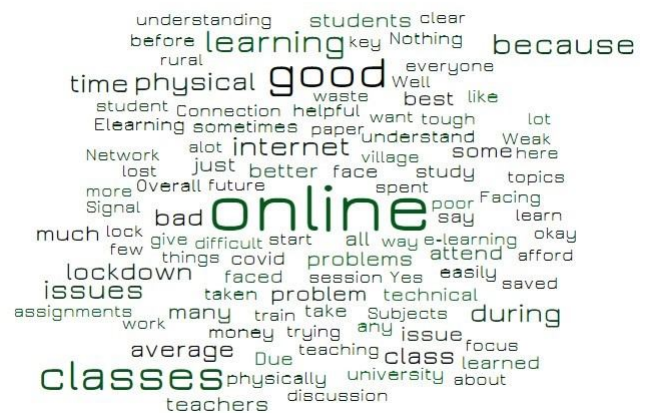


Fig. 11. Word Cloud

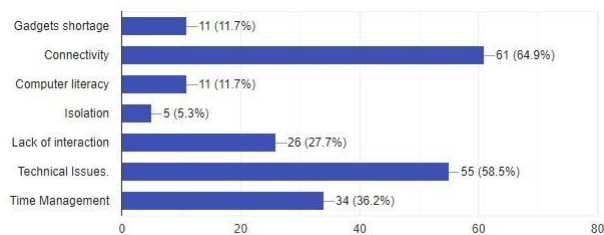


Fig. 12. Problems faced by participants during online classes

Students were asked that what problems mostly they faced while attending the online classes. Figure No. 12 shows that majority of students faces the Internet connectivity and Technical issues. However, rest of the students faces problem due to lack knowledge of Computer specially first year students. Other participants reported that due to lack of interaction, gadget shortage and time management issues.

As Questionnaire contains one open-ended question in which participants were asked to share their overall experience of online learning during the lock-down? Sentiment means the view about anything. By using AI and Machine Learning technique we can extract the information from Text which shows some sentiments / emotion about something. There are various areas where sentimental analysis have been used such as customer satisfaction, review of products, social media post (negative / positive) [11], sentimental analysis about vaccination [12]. Figure No. 13 shows the overall sentiments of students calculated through the **MonkeyLearn** [13]. It is free tool to use for sentimental analysis. Result of this tool shows that 44% negative sentiments means students are not showing willingness for the online classes due to internet connectivity and other technical issues.

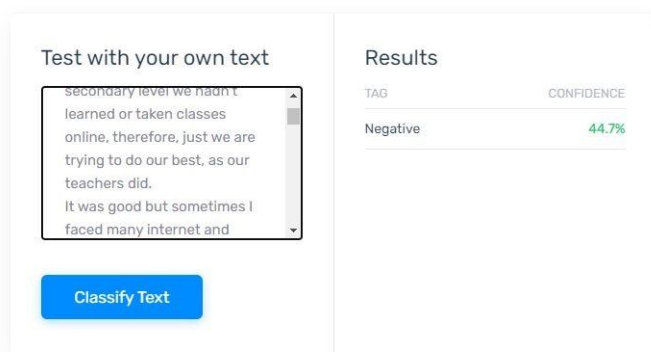


Fig. 13. Participants Sentiments about online classes

## 6 CONCLUSION

The authors conclude from the collected data is that Majority of students complains about the Internet Connectivity issue as participants reports that they do travel to attend online classes due to unavailability of internet in the Rural areas. However, some areas have signals issues too. almost 31% students whose don't have computing device or internet facility they use to travel from their home to friend's residency to attend online

class or to attempt online examination with the help of friend's resources. Students showed 55.3% positive sentiments and rest of students showed negative sentiments due to unavailability of computing device, internet facility, internet connectivity issues.

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## REFERENCES

1. S. Pokhrel and R. Chhetri, "A literature review on impact of covid-19 pandemic on teaching and learning," *Higher Education for the Future*, vol. 8, no. 1, pp. 133–141, 2021.
2. L. Sun, Y. Tang, and W. Zuo, "Coronavirus pushes education online," *Nature Materials*, vol. 19, no. 6, pp. 687–687, 2020.
3. H. R. Kummitha, N. Kolloju, P. Chittoor, and V. Madepalli, "Coronavirus disease 2019 and its effect on teaching and learning process in the higher educational institutions," *Higher Education for the Future*, p. 2347631120983650, 2020.
4. L. Mishra, T. Gupta, and A. Shree, "Online teaching learning in higher education during lockdown period of covid-19 pandemic," *International Journal of Educational Research Open*, vol. 1, p. 100012, 2020.
5. S. Neerja, "Online teaching-learning during covid-19: Experience of nursing programmes of ignou," *ONLINE TEACHING-LEARNING DURING COVID-19: EXPERIENCE OF NURSING PROGRAMMES OF IGNOU* Dr. Neerja SOOD, School of Health Sciences, IGNOU, Maidan Garhi, New Delhi 3-13, p. 3.
6. S. MINHAS, T. HUSSAIN, A. GHANI, and K. SAJID, "Exploring students online learning: A study of zoom application,"
7. G. Sakkir and S. Dollah, "Facebook-based writing instructional material in english class: Lecturers' perception," *Seltics*, vol. 2, no. 2, pp. 76–83, 2019.
8. K. O'Neill, G. Singh, and J. O'donoghue, "Implementing elearning programmes for higher education: A review of the literature," *Journal of Information Technology Education: Research*, vol. 3, no. 1, pp. 313–323, 2004.
9. F. R. Robin Mason, *E-learning: the key concepts*. Routledge Key Guides, 2006.
10. T. M. Khan, "Use of social media and WhatsApp to conduct teaching activities during the COVID-19 lockdown in Pakistan," *International Journal of Pharmacy Practice*, vol. 29, pp. 90–90, 07 2020.
11. M. Soleymani, D. Garcia, B. Jou, B. Schuller, S.-F. Chang, and M. Pantic, "A survey of multimodal sentiment analysis," *Image and Vision Computing*, vol. 65, pp. 3–14, 2017. Multimodal Sentiment Analysis and Mining in the Wild Image and Vision Computing.
12. S. H. M. R. N. H. Abd Rahim, "Sentiment analysis of social media data in vaccination," *International Journal of Emerging Trends in Engineering Research*, pp. 5259–5264, September 2020.
13. "Sentiment analysis." <https://monkeylearn.com/sentimentanalysis/>, 2021. [Online accessed 27.03.2021].